

IN THE CLAIMS:

Please amend the claims as follows. The claims, as pending in the subject application read as follows:

1. (Currently Amended) An image processing apparatus, comprising:
input means for inputting multivalued image information;
conversion means for converting the input multivalued information into first data representing a number of print dots for each pixel;
generation means for generating second data representing the total number of print dots in each region made up of a plurality of pixels, based on the first data;
a memory for storing the second data generated by said generation means;
and
print dot layout determination means for inputting from said memory a plurality of the second data comprising the second data of a region of interest and the second data of at least one region around the region of interest, and determining a print dot layout in the region of interest in accordance with the plurality of the second data,
wherein said print dot layout determination means distributes dots of the print dot layout in the region of interest in a main scanning direction in the case that a difference between the total number of print dots in one side region of the region of the interest and the total number of print dots in another side region of the region of the interest is small and the total number of print dots in the region of interest is small, and
wherein said print dot layout determination means concentrates dots of the print dot layout

in the region of interest at the center of the region in the case that the difference is small and the total number of print dots in the region of interest is large.

2. (Canceled)

3. (Currently Amended) ~~An image processing apparatus, comprising:
input means for inputting multivalued image information of an image;
conversion means for converting the input multivalued image information
into first data representing a number of print dots for each pixel;
generation means for generating second data representing the total number
of print dots in each region, which is made up of a plurality of pixels, based on the first
data;
a memory for storing the second data generated by said generation means;
and
print dot layout determination means for inputting from said memory a
plurality of the second data comprising the second data of a region of interest and the
second data of at least one region around the region of interest, and determining a print dot
layout in the region of interest in accordance with the plurality of the second data;~~

The apparatus according to Claim 1,

wherein, when the image is to be rotated, said generation means generates
the second data for print dots for each of different regions in accordance with a rotational
angle, before the rotation.

4. (Currently Amended) The apparatus according to Claim 3, wherein said generation means comprises:

first generation means for generating the second data ~~in binary form~~ in a region made up of a predetermined number of successive pixels in a main scanning direction; and

second generation means for generating the second data ~~in binary form~~ in a region made up of a predetermined number of successive pixels in a subscanning direction,

and said generation means outputs:

when an image is not rotated, the second data generated by said first generation means, directly,

when an image is rotated through 180° , the second data generated by said first generation means, in an inverse bit order,

when an image is rotated through 90° , the second data generated by said second generation means, directly, and

when an image is rotated through 270° , the second data generated by said second generation means, in an inverse bit order.

5. (Original) The apparatus according to Claim 1, further comprising image printing means for printing an image on a printing medium in accordance with the print dot layout output from said print dot layout determination means.

6. (Currently Amended) An image processing method, comprising the steps of:

an input step of inputting multivalued image information;

a conversion step of converting the input multivalued image information into first data representing the number of print dots for each pixel;

a generation step of generating second data representing the total number of print dots in each region made up of a plurality of pixels, based on the first data;

a memorizing step of storing the second data generated by said generation means in a memory; and

a print dot layout determination step of inputting from said memory a plurality of the second data comprising the second data of a region of interest and the second data of a least one region around the region of interest, and determining a print dot layout in the region of interest in accordance with the plurality of the second data,

wherein said print dot layout determination step distributes dots of the print dot layout in the region of interest in a main scanning direction in the case that a difference between the total number of print dots in one side region of the region of the interest and the total number of print dots in another side region of the region of the interest is small and the total number of print dots in the region of interest is small,

and wherein said print dot layout determination step concentrates dots of the print dot layout in the region of interest at the center of the region in the case that the difference is small and the total number of print dots in the region of interest is large.

7. (Currently Amended) ~~An image processing method, comprising the steps of:~~

~~inputting multivalued image information of an image;~~

~~converting the input multivalued image information into first data
representing a number of print dots for each pixel;
generating second data representing the total number of print dots in each
region, which is made up of a plurality of pixels, based on the first data;
storing the second data generated by said generating step in a memory; and
a print dot layout determination step of inputting from the memory a
plurality of the second data comprising the second data of a region of interest and the
second data of at least one region around the region of interest, and determining a print dot
layout in the region of interest in accordance with the plurality of the second data;~~

The image processing method according to Claim 6,

wherein, when the image is to be rotated, the generating step generates the
second data for print dots for each of different regions in accordance with a rotational
angle, before the rotation.

8. (Currently Amended) The method according to Claim 7, wherein
the generation step comprises:

a first generation step of generating the second data ~~in binary form~~ in a
region made up of a predetermined number of successive pixels in a main scanning
direction; and

a second generation step of generating the second data ~~in binary form~~ in a
region made up of a predetermined number of successive pixels in a subscanning direction,
and said generating step outputs,

when an image is not rotated, the second data generated in the first generation step, directly,

when an image is rotated through 180°, the second data generated in the first generation step, in an inverse bit order,

when an image is rotated through 90°, the second data generated in the second generation step, directly, and

when an image is rotated through 270°, the second data generated in the second generation step, in an inverse bit order.

9. (Currently Amended) A computer-readable storage medium which stores a program for an image processing method, the program comprising the steps of:

an input step of inputting multivalued image information;

a conversion step of converting the input multivalued image information into first data representing the number of print dots for each pixel;

a generation step of generating second data representing the total number of print dots in each region made up of a plurality of pixels, based on the first data;

a memorizing step of storing the second data generated by said generating step in a memory; and

a print dot layout determination step of inputting from the memory a plurality of the second data, comprising the second data of a region of interest and the second data of at least one region around the region of interest, and determining a print dot layout in the region of interest in accordance with the plurality of the second data,

wherein said print dot layout determination step distributes dots of the print dot layout in the region of interest in a main scanning direction, in the case that a difference between the total number of print dots in one side region of the region of the interest and the total number of print dots in another side region of the region of the interest is small and the total number of print dots in the region of interest is small,

and wherein said print dot layout determination step concentrates dots of the print dot layout in the region of interest at the center of the region in the case that the difference is small and the total number of print dots in the region of interest is large.

10. (Cancelled).

11. (Cancelled).